International Journal of Scientific Research in Science and Technology
Print ISSN: 2395-6011 | Online ISSN: 2395-602X (www.ijsrst.com)
© 2021 | IJSRST | Volume 8 - Issue 1

Diversity of Butterflies in Wani, District-Yavatmal (M.S.)

Paresh Patel*, Priya Uttarwar, Dnyaneshwar Khamankar
Lokmanya Tilak Mahavidyalaya, Wani. Dist- Yavatmal, Maharashtra, India

ABSTRACT

The present paper deals with a study of the diversity and abundance of butterflies in and around Wani city, district Yavatmal (M.S.), India. A Total 34 species of butterflies belonging to 26 genera and 05 families, namely, Hesperiidae, Lycaenidae Nymphalidae, Papilionidae and Pieridae were recorded from different habitats, urbanized habitat i.e. Wani locality (Site I) and less urbanized habitat (Agricultural area) (Site II). The family Nymphalidae (44.11%) was found abundant and family Hespiridae (2.94%) was found least abundant among all the families. The study area is rich in butterfly diversity and further research could be conducted to obtain more details and documentation on butterfly diversity for the conservation

Keywords: Wani, Butterfly, Diversity, Habitat, Shannon Index

I. INTRODUCTION

Biodiversity is the total variety of life on the earth. The abundance and diversity of butterflies mainly depend upon various factors such as availability of host and larval food plants, foliage, humid climate and various other features etc. As butterflies are mainly dependent on these factors, interruption in any of the above will directly affect their standing in ecosystem. India is one of the 17 "mega diverse" countries of the world. It is host to an impressive number of butterflies, many of which are widely spread to the Indian Region, which makes this an important region particularly for butterfly diversity and conservation. But deforestation and increased human approach in forest and other ecosystems have resulted into loss of habitat for most of the local species diversity (Gupta, 2018).

Heppner (1998) reported 19238 species of butterflies in the world. Gaonkar (1996) listed 1504 species in Indian subcontinent. Study by Abreau (1931) reported about 177 species of butterflies in Central Provinces. Tiple (2011) recorded a total of 167 species of 90 genera from Vidarbha region. A total of 92species of butterflies were reported in Gorewada International Biopark situated in Central India (Patil and Shende,2014).

The aim of current study is to find out the current status of butterflies in Wani area of Yavatmal district and to prepare a checklist of butterflies of this region for the purpose of conservation of native species present in this area.

II. MATERIALS AND METHODS

Study Area: Wani is a city in Yavatmal district in Indian state of Maharashtra. It is situated at eastern side of Yavatmal district about 107 kms from Yavatmal on Yavatmal-Chandrapur road. Wani is located on river side of Nirguda, flowing from western side of Wani. The city has large belt of agriculture which produce mostly cotton, soya-bean and red gram (Toor). Wani is located at co-ordinates 20°07'N, 78°95'E at 228m AMSL (Above Mean Sea Level).

Methods

Active Searching and Photography: The field surveys on butterflies were carried out in the study area three times a week for the period of six months from December 2018 to May, 2019. Butterflies were accessed in the study area from 7am to 11am in the morning and 4pm to 6pm in the evening by random observations during walking through the selected sites based on habitats present in the study area. In the field, photographs of the butterflies were taken with the aid of camera for the identification purpose based on (Dey et al., 2017). Butterflies were actively searched near water bodies, rocks, shrubs, grounds debris, and on barks of trees on the ground surface for Photography. Photography was done by using Cannon p900 Cameras.

Identification: Identification was done by available keys and with the help of experts.

Statistical Analysis:-

Identified species of butterfly observed in the study area were analyzed by using Simpson index of diversity formula adopted by (Sunil et al., 2016) and (Ashok, 2017).

The Simpson index of diversity mathematical formula is giving as follows:

$$(D) = 1 - \frac{\sum n(n-1)}{N(N-1)}$$

Where:

D = Simpson Index of Diversity

Σ = sum of (Total)

n = the number of individuals of each different species

N = the total number of individuals of all the species

III. RESULTS AND DISCUSSION

In present study 34 Species belonging to 26 genera of 5 families were recorded. Where Nymphalidae represents higest numbers of species (15) which are followed by Pieridae (07), Lycaenidae (06), Papilinidae (05) and Hespiridae (01) (Table No-02). Thus Nymphalidae is most dominant family exploring (44.11 %) and Pieridae is exploring (20.60%) of species while family Lycaenidae is 17.64 % , family Papilionidae is 14.71%. and family Hespiridae is with 2.94%.(Table no-1, Fig-1). The results calculated so far clearly specify that the overall diversity of Butterflies in this region is quite good. This study reveals that the butterflies at different regions of the desired area show high diversity.

Table 01 : Number of Families, Genera, and Species of butterfly recorded In Site I (Urbanized) and Site II (least Urbanized).

Sr.No.	Family	Genera	Species	Species %
1	Hespiridae	1	1	2.94%
2	Lycaenidae	5	6	17.64%
3	Nymphalidae	11	15	44.11%
4	Papilionidae	3	5	14.71%
5	Pieridae	6	7	20.60%
Total		26	34	100%

Table 02: List of Butterflies recorded in the study area (SI-Wani locality, SII-Agriculture land)

Common Name	Scientific Name	Local Status	IUCN Status
Family: Papilionidae			
Tailed Jay	*Graphium agamemnon* (Linnaeus, 1758)	Common	Ne
Common rose	*Pachliopta aristolochiae* (Fabricius, 1775)	Common	Lc
Crimson rose	*Pachliopta hector* (Linnaeus, 1758)	Common	Ne
Lime butterfly	*Papilio demoleus* (Linnaeus, 1758)	Abundant	Ne
Common Mormon	*Papilio polytes* (Linnaeus, 1758)	Abundant	Ne
Family: Pieridae			
Common emigrant	*Catopsilia pomona* (Fabricius, 1775)	Abundant	Ne
Mottled emigrant	*Catopsilia pyranthe* (Linnaeus, 1758)	Common	Ne
Common Gull	*Cepora nerissa* (Fabricius, 1775)	Abundant	Ne
Common Grass yellow	*Eurema hecabe* (Linnaeus, 1758)	Abundant	Ne
Great Orange Tip	*Hebomola glaucippe* (Linnaeus, 1758)	Occasional	Ne
White Orange Tip	*Ixias Marianne* (Cramer, 1775)	Common	Ne
Common Wanderer	*Pareronia valeria* (Cramer, 1776)	Common	Ne
Family: Nymphalidae			
Tawny castor	*Acraea violae* (Fabricius, 1775)	Common	Ne
Angled castor	*Ariadne ariadne* (Linnaeus, 1763)	Common	Ne
Plain Tiger	*Danaus chrysippus* (Linnaeus,1758)	Abundant	Ne
Striped Tiger	*Danaus genutia* (Cramer, 1779)	Abundant	Ne
Common crow	*Euploea core* (Cramer, 1780)	Abundant	Lc
Great eggfly	*Hypolimnas bolina* (Linnaeus, 1758)	Common	Ne
Danaid eggfly	*Hypolimnas misippus* (Linnaeus, 1764)	Common	Ne
Lemon Pansy	*Junonia lemonias* (Linnaeus, 1758)	Abundant	Ne
Blue Pansy	*Junonia orithya* (Linnaeus, 1764)	Abundant	Ne
Common evening brown	*Melanitis leda* (Linnaeus, 1758)	Abundant	Ne
Common Sailer	*Neptis hylas* (Linnaeus, 1764)	Common	Ne
Blue Tiger	*Tirumala limniace* (Cramer, 1775)	Abundant	Ne
Dark Blue Tiger	*Tirumala septentrionis* (Cramer, 1775)	Abundant	Ne
Painted Lady	*Synthia cardui* (Linnaeus, 1764)	Common	Ne
Common Three ring	*Ypthima asterope* (klug, 1832)	Common	Ne
Family: Lycaenidae			
Lime blue	*Chilades lajus* (Stoll, 1780)	Abundant	Ne
Gram blue	*Euchrysops cnejus* (Fabricius, 1798)	Abundant	Ne
Pea blue	*Lampides boeticus* (Linnaeus, 1767)	Abundant	Ne

Lesser Grass blue	*Zizina otis* (Fabricius, 1787)	Abundant	Ne
Common Pierrot	*Castalius rosimon* (Fabricius, 1775)	Frequent	Ne
Plains cupid	*Luthrodes pandava* (Horsfield, 1829)	Frequent	Ne
Family: Hespiridae			
Rice swift	*Borbo cinnara* (Wallace, 1866)	Abundant	Ne

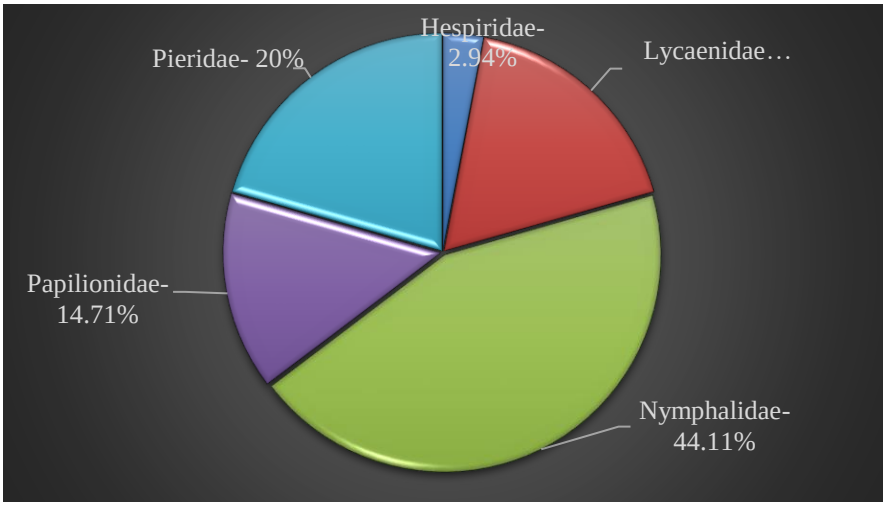

Fig-1: Families of Butterflies with % of species

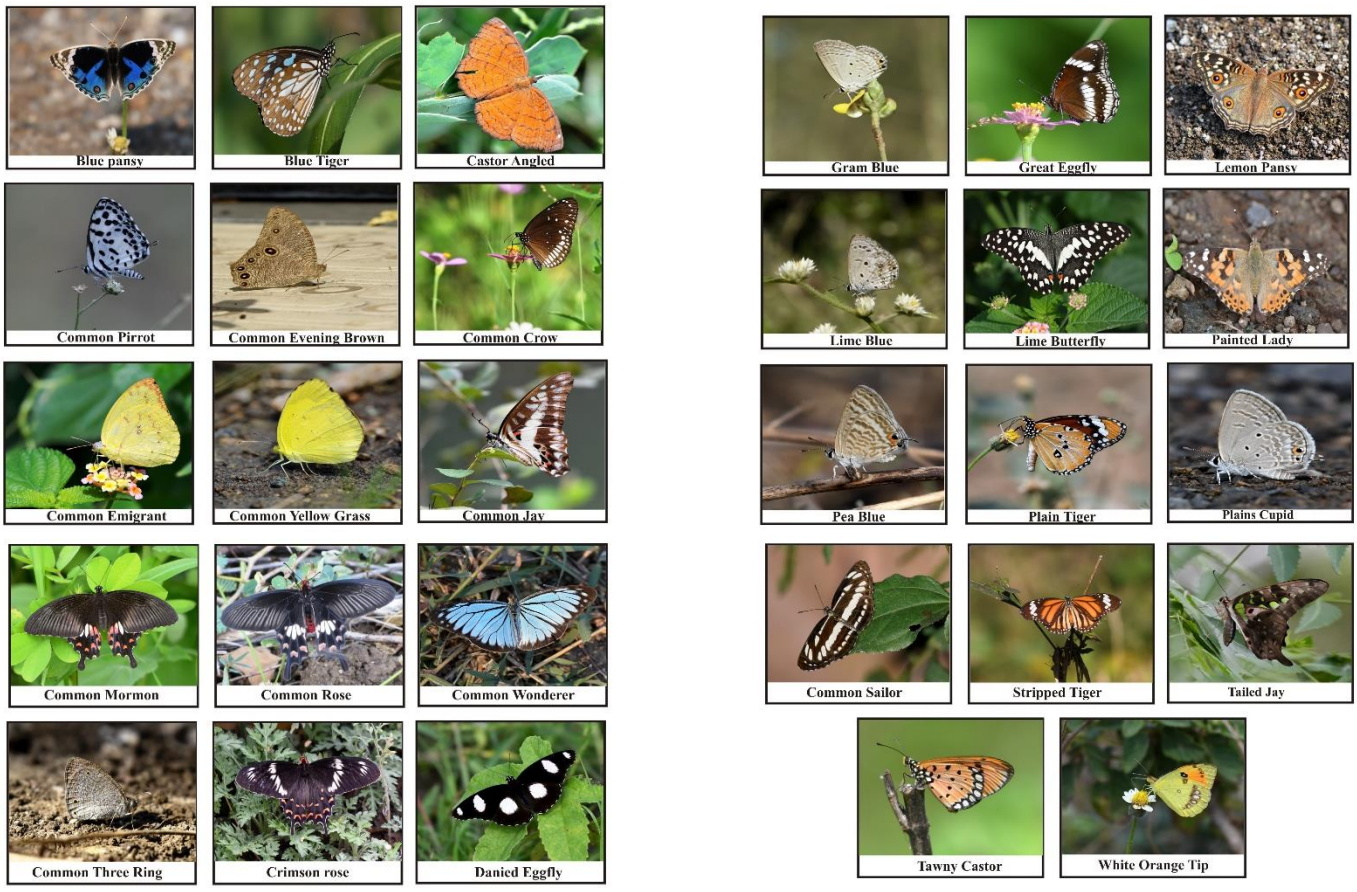

Fig. 2 : Photographs of Butterflies from Wani Area

IV. ACKNOWLEDGMENT

Authors are thankful to the Dr. R. S. Virani, Head department of Zoology S. M. Arts, Commerce and Science College, Pandharkawada for help in Identification of butterfly species.

V. REFERENCES

[1]. Ashok, K. (2017): Species diversity and distribution of butterfly fauna with heterogeneous habitats in Jhansi, India. International Journal of Advanced Research in Biological Sciences, 4(7): 104-110.

[2]. D'Abreu EA (1931): The Central Provinces Butterfly List. Records of the Nagpur Museum Number VII. Government Printing Press, Nagpur, India.

[3]. Dey, P., Payra, A. and Mondal, K. (2017): A study on butterfly diversity in Singur, West Bengal, India. Journal of e – planet, 15(1): 73-77.

[4]. Gaonkar H (1996): Butterflies of Western Ghats with notes on those of Sri Lanka. A Report to the Centre of Ecological Sciences. Indian Institute of Science, Bangalore, Zoological Museum, Copenhagen and Natural History Museum, London, UK

[5]. Gupta SS (2018): Study of Butterfly Diversity from Campus area of Amolokchand Mahavidyalaya Yavatmal, Maharashtra, India, Int. J. of. Life Sciences, Volume 6(1): 279-281.

[6]. Heppner J (1998): Classification of Lepidoptera Part I: Introduction. Holarctic Lepidoptera. 5(Suppl.): 148

[7]. Nimbalkar R.K. (2018): Diversity of Butterflies from Ajanta Caves area of Aurangabad District (MS). Int. Res. J. of Science & Engineering. Special issue A6:20-25

[8]. Patil KG, Shende VA (2014): Butterfly diversity of Gorewada International Bio Park, Nagpur, Central India. Arthropods, 3(2): 111-119

[9]. Sunil, K., Deepti, M., Priyanka, V.L. and Lily, S.N. (2016): Butterfly diversity of the Gangetic plain (Doaba) at Allahabad, U.P, India. Journal of Entomology Studies, 4(6): 268-271.

[10]. Tiple AD (2011): Butterflies of Vidarbha region, Maharashtra State, central India. Journal of Threatened Taxa, 3(1): 1469-1477.